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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,894

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Paul Wight

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EXAMINER

MARTIN, LAURA E

ART UNIT

PAPER NUMBER

2853

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/530,894	<b>Applicant(s)</b> WIGHT, PAUL	
	<b>Examiner</b> LAURA E. MARTIN	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,7-9,12,15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7-9,12,15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu et al. (US 2002/0059884 A1) in view of Toyoda et al. (JP 59-053565 A).

#### **Ryu et al. disclose the following claim limitations:**

As per claim 1: a process for printing on a porous substrate (paper has been defined in Ryu as being porous) [0011] and [0014] comprising ink jet printing an ink comprising a dye [0027], casein [0031] and a liquid medium [0032] onto the substrate to give a print wherein the liquid medium comprises water and a water-miscible organic solvent, the weight ratio of water to water-miscible organic solvent is from 95:5 to 70:30 [0032]. While Ryu et al. do not specifically disclose the dye and casein being in contact with each other, it would have been obvious to one having ordinary skill in the art at the time of the invention that if an ink dispersion contains both dye and casein, the dye and casein would have contact with each other.

As per claim 12: the casein and dye are applied to the substrate such that there is 0.1 to 10 parts casein calculated on a 100% solids basis [0031]; 0.1 to 15 parts dye [0027]; and 99.8 to 74.9 parts of a liquid medium [0032], wherein the liquid medium comprises water and a water-miscible organic solvent, the weight ratio of water to water-miscible organic solvent is from 95:5 to 70:30 [0032], and all parts are by weight such that the casein, dye and liquid medium add up to 100 parts and the ink comprises less than 0.1% by weight of di- and tri-valent metal ions (there is no mention of divalent metal ions or trivalent metal ions, such that it can be assumed that these components are not present in the ink composition of Ryu et al).

**Ryu et al. do not disclose the following claim limitations:**

As per claims 1 and 12: the solubility of the dye in the liquid medium is at least 10% by weight at 20°C.

**Toyoda et al. disclose the following claim limitations:**

As per claims 1 and 12: the solubility of the dye in the liquid medium is at least 10% by weight at 20°C (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method taught by Ryu et al. with the disclosure of Toyoda et al. in order to reduce the nozzle clogging of ink in the printhead. It would have been well known in the art at the time of the invention that different dyes can be used as colorants in ink jet inks.

Claims 7, 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu et al. (US 2002/0059884 A1) and Toyoda et al. (JP 59-53565 A), and further in view of Malhorta et al. (US 5500668 A).

**Ryu et al. as modified disclose the following claim limitations:**

The ink taught in claim 1.

**Ryu et al. as modified do not disclose the following claim limitations:**

As per claim 7: the substrate comprises filler and binder in a weight ratio of at least 2:1.

As per claim 8: the filler is clay, calcium carbonate, magnesium carbonate, silica, zeolite, alumina, or a combination of two or more thereof.

As per claim 16: the substrate comprises filler and binder in a weight ratio of at least 3:1.

**Malhorta et al. do not disclose the following claim limitations:**

As per claim 7: the substrate comprises filler and binder in a weight ratio of at least 2:1 (column 24, lines 43-65 and column 23, lines 6-12).

As per claim 8: the filler is clay, calcium carbonate, magnesium carbonate, silica, zeolite, alumina, or a combination of two or more thereof (column 24, lines 43-67).

As per claim 16: the substrate comprises filler and binder in a weight ratio of at least 3:1 (column 24, lines 43-65, column 18, lines 40-52 and column 23, lines 6-12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink set taught by Ryu et al. as modified with the disclosure of Malhorta et al. in order to improve print through and enhance color.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu et al. (US 2002/0059884 A1) and Toyoda et al. (JP 59-53565 A), and further in view of Shioya et al. (US 4732613 A).

**Ryu et al. as modified disclose the following claim limitations:**

The ink taught in claim 1.

**Ryu et al. as modified do not disclose the following claim limitations:**

As per claim 9: the casein and liquid medium have been purified to lower the content of di-and tri-valent metal ions.

**Shioya et al. disclose the following claim limitations:**

As per claim 9: the casein and liquid medium have been purified to lower the content of di-and tri-valent metal ions (column 4, lines 41-58).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink taught by Ryu et al. as modified with the process taught by Shioya et al. in order to reduce nozzle clogging.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu et al. (US 2002/0059884 A1) and Toyoda et al. (JP 59-53565 A), and further in view of Adachi et al. (US 2002/0158952 A1).

**Ryu et al. as disclose the following claim limitations:**

As per claim 15: the casein and dye are applied to the substrate such that there is 0.1 to 10 parts casein calculated on a 100% solids basis [0031]; 0.1 to 15 parts dye [0027];

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and 99.8 to 74.9 parts of a liquid medium [0032], wherein the liquid medium comprises water and a water-miscible organic solvent, the weight ratio of water to water-miscible organic solvent is from 95:5 to 70:30 [0032], and all parts are by weight such that the casein, dye and liquid medium add up to 100 parts and the ink comprises less than 0.1% by weight of di-and tri-valent metal ions (there is no mention of divalent metal ions or trivalent metal ions, such that it can be assumed that these components are not present in the ink composition of Ryu et al).

**Toyoda et al. disclose the following claim limitations:**

As per claim 15: the solubility of the dye in the liquid medium is at least 10% by weight at 20°C (abstract).

**Ryu et al. as modified do not disclose the following claim limitations:**

As per claim 15: (iii) 0.0001 parts to 0.1 parts of 1,2-benzisothiazolin-3-one.

**Adachi et al. disclose the following claim limitations:**

As per claim 15: (iii) 0.0001 parts to 0.1 parts of 1,2-benzisothiazolin-3-one [0054].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink set taught by Ryu et al. as modified with the disclosure of Adachi et al. in order to produce an ink with less clogging and higher quality.

***Response to Arguments***

Applicant's arguments with respect to claims 1, 7-9, 12, 15 and 16 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA E. MARTIN whose telephone number is (571)272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura E. Martin/  
Examiner, Art Unit 2853